

I claim:

1. A pipe useful in down-hole applications for oil and gas production, as line pipe for transportation of liquids, gas and slurry, as process pipe for mining, refining, power generating and for petrochemical plant piping systems, the pipe comprising:

a pipe body having a sidewall formed from a corrosion/erosion resistant stainless steel characterized as having less than about 0.080% maximum content by weight carbon and from 10.5 to 14% content by weight chromium;

wherein the pipe body has a length and a seam region along its length, the seam region being welded by an electric resistance welding technique.

2. The pipe of claim 1, wherein the corrosion/erosion resistant stainless steel is a low carbon dual phase (ferrite plus martensite) stainless steel.

3. The pipe of claim 2, wherein the corrosion/erosion resistant stainless steel is further characterized as having a chemical balance determined by the Kaltenhauser Factor in the range from 8 to 10.7.

4. The pipe of claim 1, wherein the corrosion/erosion resistant stainless steel is a low carbon martensitic stainless steel.

5. The pipe of claim 4, wherein the corrosion/erosion resistant stainless steel is further characterized as having a chemical balance determined by the Kaltenhauser Factor of less than 7.5.

6. The pipe of claim 1, wherein the corrosion/erosion resistant stainless steel is selected from the group consisting of martensitic, dual phase (ferrite plus martensite), ferritic, austenitic and duplex (austenite plus ferrite).

7. The pipe of claim 1, wherein the pipe body has a finished outside diameter greater than about 2 to 6 inches.

8. The pipe of claim 6, wherein the pipe body has a finished outside diameter greater than about 12 inches.

9. The pipe of claim 1, wherein the seam region is welded using a high frequency induction welding technique.

10. A method of manufacturing a welded pipe formed of corrosion/erosion resistant stainless steel, the method comprising the steps of:

providing as a starting material a selected one of a finished plate or coil, the selected plate or coil being formed of a corrosion/erosion resistant metal which is itself selected from the group consisting of stainless steels of the chromium, molybdenum and carbon families and mixtures thereof;

passing the starting material through a continuous high speed forming mill to produce a formed body having a longitudinal seam region and a wall thickness; and

welding the formed body along the longitudinal seam region using a high frequency induction welding process to thereby produce a welded pipe.

11. The method of claim 10, wherein the starting material is selected from a corrosion/erosion resistant stainless steel characterized as having less than about 0.080% maximum content by weight carbon and from about 10.5 to 14% content by weight chromium.

12. The method of claim 11, wherein the corrosion/erosion resistant stainless steel is selected from the group consisting of martensitic, dual phase (ferrite plus martensite), ferritic, austenitic and duplex (austenite plus ferrite).

13. The method of claim 10, wherein a weld is produced along the longitudinal seam region characterized by complete weld penetration being achieved through the wall thickness of the formed body without the use of filler metal.
14. The method of claim 13, wherein the weld pipe is further characterized as having an oxide free weld bond line along the longitudinal seam region.
15. The method of claim 11, wherein the corrosion/erosion resistant stainless steel is a low carbon dual phase (ferrite plus martensite) stainless steel.
16. The method of claim 15, wherein the corrosion/erosion resistant stainless steel is further characterized as having a chemical balance determined by the Kaltenhauser Factor in the range from 8 to 10.7.
17. The method of claim 11, wherein the corrosion/erosion resistant stainless steel is a low carbon martensitic stainless steel.
18. The method of claim 17, wherein the corrosion/erosion resistant stainless steel is further characterized as having a chemical balance determined by the Kaltenhauser Factor of less than 7.5.
19. The method of claim 11, wherein the corrosion/erosion resistant stainless steel is a low carbon dual phase stainless steel with 10.5 to 14% chromium content by weight.
20. The method of claim 11, wherein the corrosion/erosion resistant stainless steel is a low carbon martensitic stainless steel with 10.5 to 14% chromium content by weight.
21. The method of claim 10, wherein the pipe body has a finished outside diameter greater than about 2 to 6 inches.

22. The method of claim 21, wherein the pipe body has a finished outside diameter greater than about 12 inches.

23. The method of claim 10, wherein the welding process results in a soft low carbon martensitic heat affected zone of the pipe, the method further comprising the steps of:

optional post induction or gas fired heating of the heat affected zone in a temper heat treatment step, the temper heat treatment of the soft low carbon martensitic heat affected zone of the pipe providing a resulting improved weld ductility along the longitudinal seam region; and

performing a full body inspection and/or a weld zone inspection upon the finished pipe.

24. The method of claim 23, wherein the inspection is performed by means of an ultrasonic inspection and/or an electromagnetic inspection process to insure that the pipe body and heat affected zone are free of specification defects.

25. The method of claim 10, wherein the resulting pipe has a given maximum outer diameter, the maximum outer diameter being limited only by the maximum size of continuous roll forming mill.